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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09 929,934	08 15 2001	Yuu Ishii	14998.280	1135

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EXAMINER

KIM, RICHARD H

ART UNIT PAPER NUMBER

2882

DATE MAILED: 10 24 2002

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/922,934

Applicant(s)

WEIMER ET AL.

Examiner

Richard H Kim

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☐ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) 5-7 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-7 are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## DETAILED ACTION

### *Election/Restrictions*

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 1-4, drawn to a manufacturing method for an optical fiber grating, classified in class 385, subclass 37.
  - II. Claim 5, drawn to an optical fiber grating, classified in class 385, subclass 37.
  - III. Claims 6-7, drawn to a manufacturing apparatus for an optical fiber grating, classified in class 385, subclass 37.
  
2. Inventions I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case, the process of Invention I can be used to make another and materially different product. For example, the process of Invention I can be made to make a product not comprising of a sample fiber.
  
3. Inventions I and III are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the apparatus as

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claimed can be used to practice another and materially different process. For example, the apparatus of Invention III can be used for a manufacturing method of carrying out non-uniform ultraviolet irradiation processing.

4. Inventions II and III are related as apparatus and product made. The inventions in this relationship are distinct if either or both of the following can be shown: (1) that the apparatus as claimed is not an obvious apparatus for making the product and the apparatus can be used for making a different product or (2) that the product as claimed can be made by another and materially different apparatus (MPEP § 806.05(g)). In this case the apparatus as claimed is not an obvious apparatus for making the product and the apparatus can be used for making a different product. For example, the apparatus of Invention III can be used to make an optical fiber grating, wherein the minimum refractive index of the grating part is smaller than the refractive index of the sample fiber.

5. During a telephone conversation with Daniel Basov on 7 October 2002 a provisional election was made without traverse to prosecute the invention of I, claims 1-4. Affirmation of this election must be made by applicant in replying to this Office action. Claim 5-7 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

6. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the

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currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shima et al. (US 5,949,934) in view of Kohnke et al. (US 6,221,566 B1).

Shima et al. discloses a method comprising the steps of forming a grating part (see col. 1, lines 49-50) having a period refractive index distribution (see col. 1, lines 50-51) by irradiating an optical fiber along the longitudinal direction by ultraviolet light (see col. 1, lines 60-62) at a predetermined period (see col. 1, lines 60-61) and carrying out dehydrogenation when necessary (see col. 16, lines 1-12). However, the reference does not disclose carrying out at least one time uniform ultraviolet irradiation processing that irradiates the grating part as a whole with UV light; and carrying out heat aging in order to stabilize the optical properties of the grating part.

Kohnke et al. discloses a method comprising the step of carrying out at least one time uniform UV irradiation processing that irradiates the grating part as a whole with ultraviolet light

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(see col. 5, lines 32-36); and carrying out heat aging in order to stabilize the optical properties of the grating part (see 42-49).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to carry out at least one time uniform UV irradiation processing that irradiates the grating part as a whole with ultraviolet light. In since one would be motivated to maximize the consistency of the grating, thereby increasing the reliability of the device. Through such a modification, the refractive index of the grating is increase uniformly and for the same amount of time (see col. 5, lines 36-40), thereby creating a consistent grating. Further, it would have been obvious to one having ordinary skill in the art at the time the invention was made to carry out heat aging in order to stabilize the optical properties of the grating part since one would be motivated by optimum stability. Through heat aging, the refractive index is stabilized through the diffusing of gas (see abstract). As a result, variations of refractive index due to aging will be minimized.

3. Claims 2-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shima et al. and Kohnke et al., further in view of Chen et al. (US 6,356,681 B1)

Referring to claims 2 and 3, Shima et al. and Kohnke et al. disclose the device previously recited. However, the references do not disclose the method wherein before or after the uniform up irradiation processing, heat trimming processing is carried out at least one time by heating the grating as a whole in order to adjust the optical properties, wherein the uniform irradiation processing and the heat trimming processing are repeatedly carried out at an arbitrary number of times and in an arbitrary sequence.

Chen et al. discloses a method of heating trimming processing by heating the grating in order to adjust optical properties (see Chen et al., col. 2. lines 13-20).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to carry out heat trim processing at least one time by heating the grating as a whole in order to adjust the optical properties before of after the uniform ultraviolet irradiation process since one would be motivated to uniformly increase the precision of the device. Through trimming, one would be able to adjust the refractive index of the grating precisely to achieve a desired result. Further, it would have been obvious to one having ordinary skill in the art at the time the invention was made to repeatedly carry out the uniform irradiation processing and the heat trimming processing an arbitrary number of times and in an arbitrary sequence since one would be able to adjust the time and sequence accordingly to achieve a desired result, thereby adding adjustability to the method.

Referring to claim 4, Shima et al. and Kohnke et al. disclose the device previously recited. However, the references do not disclose the method monitoring the transmitted light, reflected light and the reference light of the optical fiber.

Chen et al. discloses a process of monitoring (see col. 3, lines 50-52).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to monitor the transmitted light, reflected light and the reference light of the optical fiber since one would be motivated by optimum precision. By monitoring the transmitted light, reflected light and the reference light of the optical fiber one would be able to adjust the apparatus to respond to the data provided by the monitor, correcting for any errors within the device.

*Conclusion*


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard H Kim whose telephone number is (703)305-4791. The examiner can normally be reached on 8:30-5:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H Kim can be reached on (703)305-3492. The fax phone numbers for the organization where this application or proceeding is assigned are (703)308-7722 for regular communications and (703)308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.

Richard H Kim  
Examiner  
Art Unit 2882

RHK  
October 7, 2002

  
ROBERT H. KIM  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER